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Treatment of hypothyroidism with intra thyroidal injection of autologous platelet rich plasma and hyaluronic acid

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Introduction: Hypothyroidism is a global health issue with a staggering 200million people suffering around the world. Hypothyroidism can occur due to iodine deficiency or autoimmune conditions as Hashimoto's thyroiditis. This study excluded post-surgical and drug-induced hypothyroidism. Further, this study is to expand the literature on the role of intrathyroidal injection of autologous PRP and HA on resident thyrocyte stem cells/progenitor cells in the treatment of hypothyroidism.

Methods: This study was carried out to investigate the effects of intrathyroidal injection of autologous PRP and HA under ultrasound guidance on resident thyrocyte stem cells and thyrocyte progenitor cells in the treatment of hypothyroidism (less T3 T4 TSH), subclinical hypothyroidism (normal T3 T4 raised TSH) and autoimmune thyroiditis. 30 patients were selected from the age group of 25-70years. All patients held oral thyroxine tablets prior to intrathyroidal injection of autologous PRP and HA. 20ml Peripheral venous blood was withdrawn after pharmacologic intervention with iv Omega 3 fatty acids 10% 5gm and iv ascorbic acids without preservative 5gm. Further, it was centrifuged at 3300rpm for 7minutes to yield 6ml of PRP. This PRP was mixed with 1ml of Hyaluronic Acid, 22mg/ml, non-avian & non-allergenic. PRP was tested for microbial contamination before injection. 3ml of PRP and 1ml of HA was injected in each lobe of thyroid gland under ultrasound guidance. The patients were followed up for a period of 1year with 1month, 3months and 6months and 1year interval. Thyroid function Test, free T3, free TSH anti-TPO, anti-TG antibody tests were assessed along with ultrasound of thyroid gland. Of the 30 patients, 12 were males and 18 females. Females were categorized into 3 adolescent (age 14-19years)/TSH 7-15micro IU/ml 10 (age 21-40years)/TSH 10-30micro IU/ml, 5 (Age 41-60years)/TSH 8-16micro IU/ml. A total of 3 injections were given an interval of 15days.

Results: 27 patients responded well to the treatment and improved after 1month of injection. No adverse events were found during 1year follow up with a significant decrease in serum TSH and anti-TG antibody values. T3 T4 increased in primary hypothyroidism situations. Patients reported less lethargy less musculoskeletal pains, better concentration, improved mood improvement in dry skin and hair loss and no weight gain from baseline.

Conclusion: It is evident that thyroid niche stem cells / Progenitor cells on stimulation have regenerative potential. Either new thyrocytes come up in the gland or earlier nonfunctional or hypofunctioning thyrocytes get repaired and resume normal function. Thus intrathyroidal injection of autologous PRP and HA under ultrasound guidance can be a safe, better and effective therapy that can

permanently rescue thyroid function. PRP and HA together act as a bioscaffold.

Biography

Vikram Pabreja is a physician in medical practice for the last 25years and has a rich experience in the field of Stem Cell & Regenerative Medicine. He is first to demonstrate the role of stem cells in infectious diseases as dengue fever. He is Director of PabCyte, a platform for advances is Stem Cell enabled therapies for degenerative, autoimmune and infectious diseases in the human population. He has published his work in Indian journals and is in process of approaching International journals as well.

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